

VO₂max & Haemodynamic Profile of Woman Boxers

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Abstract

Woman boxers of national and interuniversity level participation of Punjabi University Patiala volunteered to participate in this study and their age ranged 18 to 23 years. The standard procedure was used to observe VO₂max and haemodynamic variables. The mean age, height, weight and BMI of woman boxers were 20.18±1.66 years, 162.04±5.45 cms. 60.18±10.21 Kg and 23.25±3.31 respectively. The resting VO₂ max, Heart Rate, Systolic Blood Pressure, Diastolic Blood Pressure, Pulse Pressure, Mean Arterial Pressure, Rate Pressure Product, Stroke Volume and Cardiac Output was 44.45±3.26 ml.kg⁻¹.min⁻¹, 67.00±5.15 beats/minute, 114.91±5.24 mmHg, 77.27±5.53 mmHg, 37.64±1.96 mmHg, 89.55±5.39 mmHg, 76.85±9.15 beats.min⁻¹.mmHg, 54.93±4.34 ml/beat and 3.60±0.23 L/minute respectively. It was concluded from the results that women boxers of this study have less mean value of VO₂max (aerobic fitness) and haemodynamic variables than reported of elite national and international boxers.

Key words: PP, MAP, RPP, SV, CO

Introduction

In the field of combat sports several works on taekwondo, karate kumite, nunchaku exercise, and judo have been reported (*Beneke et al, 2004; Toskovic et al, 2002*). Boxing is an intermittent sport characterized by short duration, high intensity bursts of activity. It requires significant anaerobic fitness, and operates within a well-developed aerobic system. Boxing is estimated to be 70-80% anaerobic and 20-30% aerobic (*Ghosh et al, 1995*). The study of VO₂max and haemodynamic variables can be informative in regard to the physiological status of the athletes and can also help in preparing a well defined training schedule on a physiological basis. Despite the sport's popularity, little is known about the VO₂max and haemodynamic variables like heart rate, blood pressure, pulse

pressure, mean arterial pressure, rate product pressure, cardiac output, stroke volume, and maximal oxygen consumption. Moreover, very few studies were conducted on VO₂max and haemodynamic profile of Punjabi woman boxers in India (*Chatterjee et al, 2005*). Hence, the present study was undertaken with the aim of studying the VO₂max and haemodynamic profiles of Punjabi women boxers.

Materials & Methods

Eleven woman boxers of national and interuniversity level participation of Punjabi University Patiala volunteered to participate in this study and their age ranged 18 to 23 years. The VO₂max (aerobic fitness) of each subject was estimated by taking subject's resting heart rate for 20 seconds and enter the number of beats that counted, along with subject's